



OFFICIAL GUIDE

Fort George

HMSO 5s 0d [25p] net

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Secretary of State for Scotland and cared for on his behalf by the
Ministry of Public Building and Works

FORT GEORGE is situated approximately 11 miles north-east of Inverness.
Access routes are shown opposite

HOOURS OF OPENING

	<i>Weekdays</i>	<i>Sundays</i>
APRIL TO SEPTEMBER	9.30 am — 7 pm	2 pm — 7 pm
OCTOBER TO MARCH	10 am — 4.30 pm	2 pm — 4.30 pm

ADMISSION FEES

Adults, 1s. Children under 15, 6d.

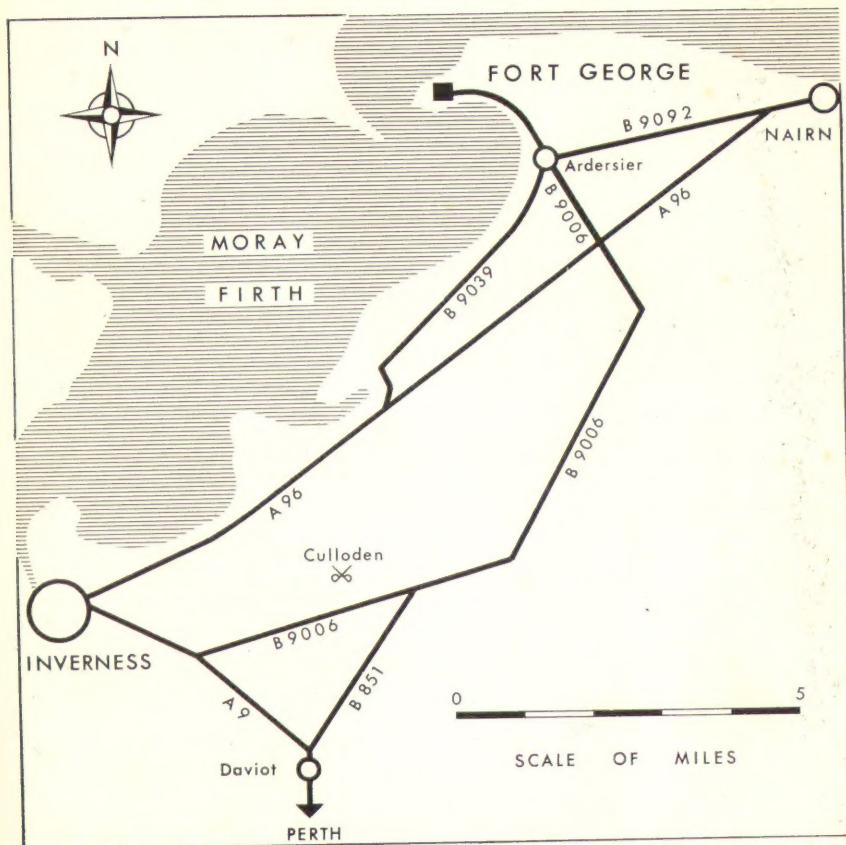
SEASON TICKETS, valid for twelve months from date of issue, admitting
their holders to all ancient monuments and historic buildings in the care
of the Ministry, may be obtained from the Ministry or at many
monuments.

THE REGIMENTAL MUSEUM in the Staff Block is administered by the
Trustees of the Queen's Own Highlanders and is open at the same times
as the fort except in winter, when it is closed on Saturdays and Sundays.

FRONT COVER DESIGN

*The Redcoat on the cover is taken from the ornamental heading of one of the original Fort George
plans, drawn in 1752*

Access map





Fort George

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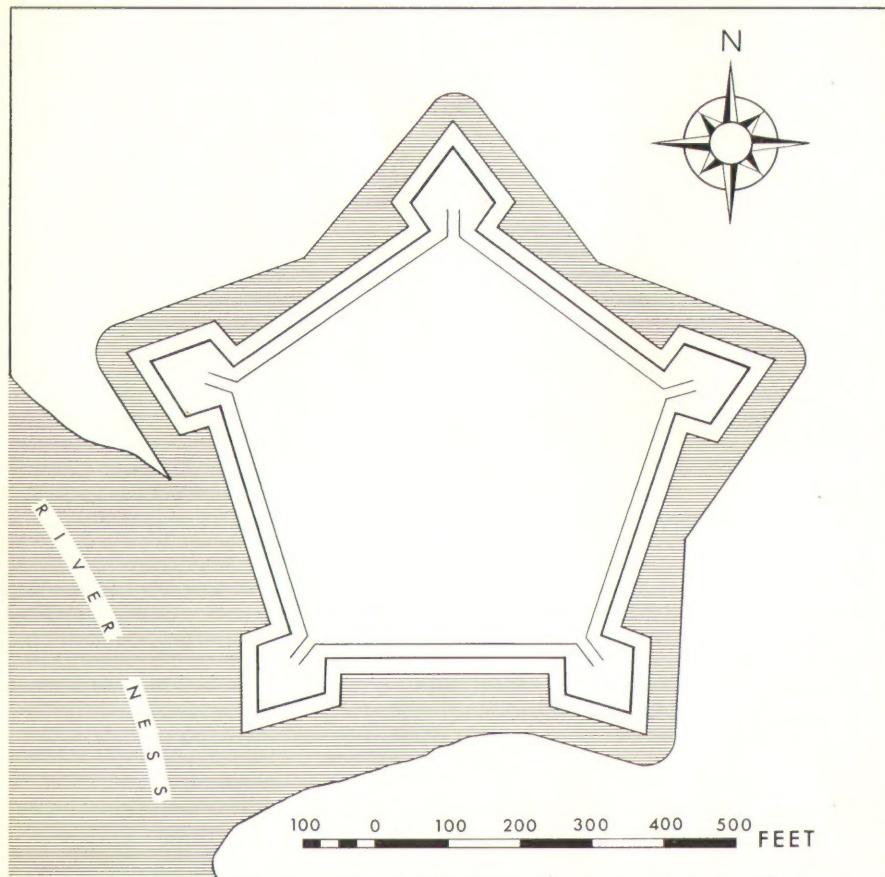
INTRODUCTION

Fort George is one of the outstanding artillery fortifications in Europe. It was begun by the Government soon after the 1745-46 Jacobite rising to hinder any more armed threats to Hanoverian law and order. When building ended in 1769 the Highlands were peaceful, but the fort has continued in use ever since as a barracks. It was the depot of the Seaforth Highlanders from 1881 until 1961.

The first part of the guide-book outlines the story of the Highland garrisons before Culloden, gives an account of the beginnings and the building of the fort, concludes with a brief history up to the present day. Most people will begin to read this book near the principal gate, and the second part is a description centred on it: over the principal bridge and through the gate; on to the main rampart and clockwise round it; through the interior of the fort from east to west; finally from the principal gate across the east front. At the end there is a glossary of technical terms and a note on books.

Visitors may freely walk about the rampart and the defences of the east front. Elsewhere the active military life of the fort imposes some limitations. The training area lies beyond the east front and no one should penetrate beyond the latter either across the glacis or along the north beach (which may be gained from the north sally-port). Normally there is access along the roads within the fort, though military activities may from time to time call for diversions which will be signposted. The guardhouse in the ravelin contains a pictorial introduction to the fort—displaying copies of several of the original plans. The other internal buildings open to visitors are the Chapel, the Queen's Own Highlanders' Museum at the north end of the Staff Block, and a pair of unaltered casemates in the north curtain.

The Cromwellian fort at Inverness was begun by Major-General Deane in 1652 and finished in 1657. It is a regular pentagon with a bastion at each angle. Beyond the rampart is a wet ditch except where the River Ness flows alongside. The plan is reproduced to the same scale as the general plan of Fort George Ardersier on the centre pages. It does not show the internal buildings. The fort was slighted in 1661 and proposals to rebuild it were made in 1746. Now only fragments of the rampart earthwork and the central clock tower survive.



HIGHLAND GARRISONS

THE Highlands had given concern to the central authority of Scotland since the middle ages. The ancient way of life of the inhabitants always caused anxiety to neighbours and frequently caused more general alarm. The first extended attempt to pacify the Highlands was made by Oliver Cromwell's generals after 1651, when English occupation added disaffection to normal unruliness. Apart from their fortifications in the Lowlands the English built a large fort at Inverness and a smaller one at Inverlochy, the site of the later Fort William. Nothing quite like the large Cromwellian forts had been constructed in Scotland before.

In the fifteenth century, cannon put at risk the high walls and towers of medieval strongholds, and prompted experiments to find the best means to use and withstand the new weapon. Italian military engineers then developed a new kind of fortification. The chief element of the defence was the bastion, which provided firepower along all the flanks of the work: its angular shape eliminated all blind spots immediately around the ramparts. The bastioned artillery fort was the successor to the medieval castle. The first systems using the new principles were devised at the end of the fifteenth century; they were improved and refined until more powerful artillery made the whole conception obsolete in the nineteenth century.

In Scotland some temporary bastioned earthworks were built in the sixteenth century, but the kingdom was not wealthy enough to afford permanent fortifications in the new fashion: the Cromwellian forts, built with English money, were the first. The fort at Inverness had the regular geometrical plan—in this case a pentagon—favoured by military engineers. The forts were better than anything built in Scotland before Fort George at Ardersier.

The Cromwellian fortifications were slighted on the restoration of Charles II. After the 1688 Revolution, William III's authority had to be assisted in the Highlands by military enterprise. The fort at Inverlochy was rebuilt in 1692 by General Mackay, who named it Fort William after his king; the larger fort at Inverness remained in ruins while Mackay strengthened the ancient castle beside the bridge over the River Ness.

The welcome extended to George I by his new subjects was

tempered by the 1715 rising. To help future security, the Government tried to disarm the Highlanders, and in 1717 ordered the erection of four infantry barracks to augment the military presence at Inverness Castle and Fort William. The largest of the barracks was at the south end of Loch Ness, near the place where Fort Augustus was later built. A smaller barracks—now the best preserved, in the guardianship of the Secretary of State for Scotland—was at Ruthven, near Kingussie in Inverness-shire.

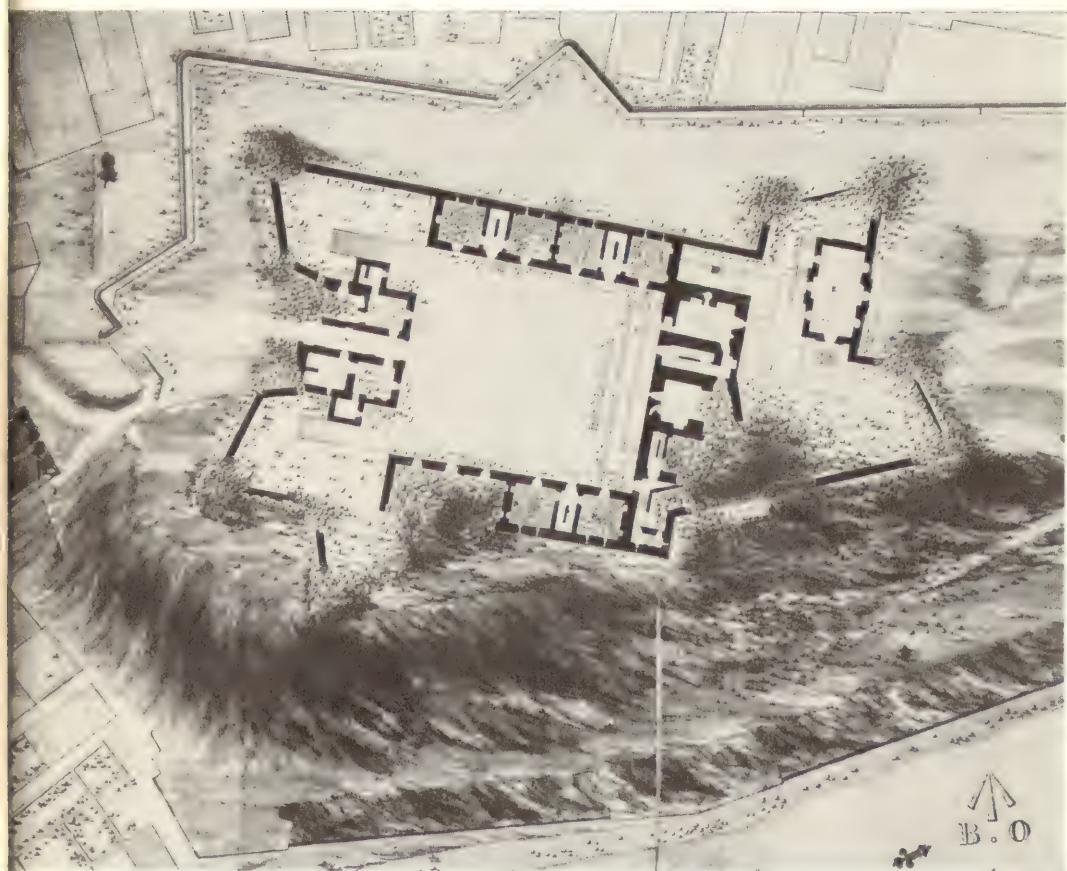
Despite Government action lawlessness and Jacobite disaffection continued. In 1724 Major-General George Wade was sent to Scotland to look into the situation and to suggest remedies. As a result, while Wade was Commander-in-Chief in Scotland, the first military roads were constructed, Fort Augustus was built to replace the nearby barracks, new works were raised round Inverness Castle which became the first Fort George. Wade saw his forts, with Fort William, as a chain linked by its military road to secure the strategically important Great Glen.

Wade's forts were designed by the engineer John Romer. Romer, like the engineers who followed him, was employed by the Board of Ordnance, whose responsibilities included the functions later given to the Royal Engineers. The forts had a superficially warlike appearance, but they were not intended to resist any serious attack. No one believed that the Highlanders were ever likely to be able to mount an effective siege with artillery. By the standards of the age they were toy forts; at best they might impress natives ignorant of the art of war.

The natives were not impressed. The Great Glen forts were ignored in the first part of the 1745 rising, and did not significantly impede its progress. Early in 1746 Prince Charles Edward's commanders decided to reduce them to allow more freedom of manoeuvre in the prolonged Highland campaign which was contemplated after the withdrawal from Derby. At Inverness a mine was begun under cover of the nearby houses of the town, and a battery from the Jacobites' scratch artillery train was established overlooking the internal buildings. Defence was judged impossible and the fort surrendered. At Fort Augustus the first trench was opened on 3rd March; two days later a shell detonated the vulnerable powder magazine in one of the bastions and the fort surrendered. The defences of the forts were blown up and the buildings were burned.

Fort William put up a more creditable defence, due rather to the spirit of the garrison than to the advantages given them by the fortifications. The siege there was raised a fortnight before Culloden. That battle on 16th April 1746 ended Jacobite hopes of further resistance. But the ruins of the two forts provided a humiliating and

The first Fort George at Inverness Castle as slighted by the rebels a few weeks before the battle of Culloden : a plan of 1750 signed by William Skinner. The buildings are burnt out and great piles of rubble mark the positions of the mines sprung by the Jacobites after the surrender. The massive rectangular tower of the ancient castle stands to right of the barrack square. All traces of the ruins were removed when the present castellated buildings, designed as a County Hall and a prison, were built in the nineteenth century.
Reproduced by permission of the Trustees of the National Library of Scotland.



cautionary spectacle for the victorious Hanoverian army. All the defensive measures that had been taken so far had proved absurdly ineffective. The martial prowess of the Highlanders must not be underestimated next time.

William Skinner (1700-80) who designed Fort George, and his daughter Susannah, later Viscountess Gage. From a portrait by Thomas Beach at Firle Place, Sussex. By permission of the Viscount Gage.



FORT GEORGE ARDERSIER

The Duke of Cumberland urgently asked the Government that Fort Augustus and Fort George Inverness should be replaced by new works. Ambitious plans were drawn up for a new Fort Augustus. None was executed, perhaps in recognition that a strong work would be wasted on a site which was tactically weak. In 1748 Wade's fort was rebuilt with only minor improvements. An unsatisfactory design for the reconstruction of the Cromwellian fort at Inverness was made in 1746 by an Irish engineer recommended by Cumberland. In the following year a second design was made by William Skinner, newly appointed as engineer for North Britain. Skinner's design was accepted. The contract for masonry and brickwork was let to William Adam, the architect father of Robert and James Adam. (William Adam had held several Board of Ordnance contracts; in the eighteenth century a man might be a contractor as well as an architect). Work was about to begin when the Burgh Council of Inverness claimed compensation for loss of use of the lately developed harbour close to the remains of the fort. The Board dropped the scheme and Skinner hastily looked for another site. In late 1747 he conceived a plan for a new work on a barren peninsula projecting into the Moray Firth at Ardersier, nine miles east of Inverness. The only building then on the peninsula was an isolated hut.

Once Skinner had taken in the capabilities of the peninsula and had surveyed it, the design was drawn quickly. It is some tribute to Skinner that in the twenty-one years while the fort was building only a few changes in detail were made to the original plan.

Although the new site had been selected by necessity rather than by free choice, it was much better than the original site by Inverness harbour. The latter was too small. No amount of redesigning of the Cromwellian fort could give sufficient space on the ramparts, and the required complement of buildings was bound to be tightly packed into the interior (compare the plans on page 6 and centre pages, reproduced to the same scale). The Ardersier peninsula was more spacious. Moreover the isolation of the latter made it a much stronger position: and it was infinitely better placed than Wade's forts, which could be approached closely by dead ground, and commanded from neighbouring heights. The proposed site at Ardersier

was indeed overlooked by high ground a little more than a mile distant to the east. But in the middle of the eighteenth century such a range was just beyond the effective capability of guns and howitzers.

The shape of the peninsula suggested a design with its landward defences concentrated on one front, towards the east. Seaward defence was not neglected—in particular there was a powerful battery at the west end to command the narrows between the fort and Chanonry Point—but it could be limited to the bastions and curtains of the encircling rampart. Thus resources could be concentrated on an elaborate defence in depth of the east front.

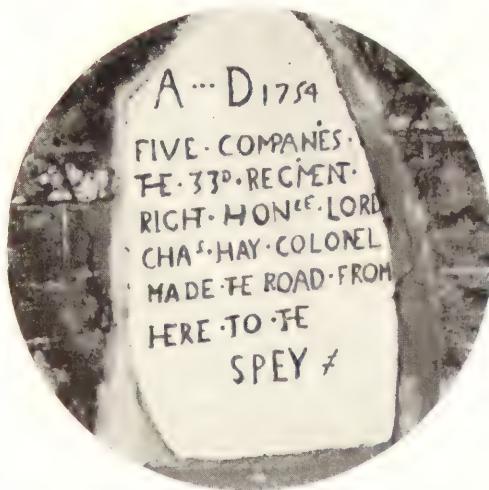
On the east front the bastions and curtain, in themselves no mean construction, form the inner line of defence. Beyond their scarps the whole extent of the principal ditch may be scoured by fire from the flanks of the bastions. Protecting the curtains and making a further line of defence is the ravelin, a large triangular work surrounded by an extension of the principal ditch. The ravelin ditch may be scoured from the faces of the bastions. The bastions and the ravelin mount cannon and, together with the curtain, may also be lined with musketeers.

Beyond the counterscarps of the ditches and reflecting their symmetrical zig-zag plan is the outer line of defence, the covered way. The latter both helps to delay a besieger at a seemly distance, and provides an assembly area for counter-attack: especially for the latter purpose two enlargements of the covered way form places of arms. The covered way is so called because it is covered from horizontal fire (it is not covered in the sense of being roofed over) by a brick parapet towards the field. The works are finished by the glacis, a broad strip of ground which is graded as a gentle slope from the covered way parapet down to original ground level.

The defensive combination of bastions and ditch was an essential feature of this type of fortification from the sixteenth century, and during the same century the ravelin and covered way were brought into common use. By the time Fort George was built these elements had been constantly revised for over two hundred years. The ravelin was enlarged until it rivalled the bastions in strength—at Fort George the ravelin is larger than the bastions. The covered way began as a narrow ledge above the counterscarp to give the garrison a foothold beyond the ditch; in Skinner's generation it had grown to a normal width of over thirty feet and contained its own special works (page 38).

The buildings of the fort were to hold two infantry battalions (1,600 men) and an artillery unit. Under siege, the interior of any contemporary fortification could be bombarded by the high-angle fire of heavy mortars (similar to those now mounted on the east

'AD 1754 Five companies the 33d Regiment Right Honle Lord Chas Hay Colonel made the road from here to the Spey': an inscription at the Well of the Lecht south of Tomintoul, beside the military road from Blairgowrie to Fort George. The road at Well of the Lecht is still in use as A939.



curtain: page 41), which had a range of one-and-a-half miles. At Fort George casemated barracks, proof against mortar bombs, were to be built under the rampart to hold the garrison in time of siege. The cost was estimated at £92,673 19s. 1½d. As sometimes happens, the actual cost was almost double the estimate; but Skinner's assistant who worked out the quantities and prices might reasonably plead that he was hard pressed for time, for work began at the east end of the site in 1748.

The fort at Ardersier was not the only work inspired by the Forty-Five. The system of military roads was greatly enlarged—by 1767 there were over one thousand miles of them. The road from Blairgowrie to Fort George was built in 1749–54; in 1748–50 existing tower-houses on its route at Braemar and Corgarff were converted into small barracks (Corgarff Castle is in the guardianship of the Secretary of State for Scotland. These helped in the successful disarming of the Highlands, carried out by active patrols of redcoats.

BUILDING THE FORT

The construction of the fort and its sequence raised problems of a quite different kind from the design. There was plenty of local unskilled labour and Skinner could also call on substantial military help for earthmoving. But there were few local tradesmen. The principal contractors and many of their men came from the Lowlands. (Although William Adam died in 1748 before work began, his contract remained with the family firm. John Adam, the eldest son who inherited it, was responsible for all the masonry and brick-work of the fort, following Skinner's designs and instructions). Almost all the building materials had to be brought in by sea. Workshops and brick kilns had to be set up. The fort was by far the biggest construction job that had ever been undertaken in the Highlands, and was not to be exceeded until Thomas Telford began the Caledonian Canal in the next century. Even under normal conditions it would have been an exacting task to erect works covering 42½ acres and containing enough buildings for a small town.

It was not built under normal conditions. At the earliest date the site had to be secured against the possibility of a surprise attack and thereafter had to be kept in a state of readiness. So in 1748 operations began on the main elements of the eastern works: the formation of the glacis slope and the building of its brick retaining wall which formed the parapet of the covered way, the building of the seaward retaining walls of the glacis, and the piling up of earth for the infill of the ravelin from the spoil of the ditch excavation. A pier was built south of the fort by John Adam to land materials. In 1749 the glacis was formed and the brick wall behind it was complete. A start was made on the masonry of the counterscarp and on the piling up of earth for the eastern bastions and curtain. Next year a temporary palisade was set up right round the rest of the site, which could then be defended after a fashion. Now, when the most extensive earth-moving was being undertaken, more than one thousand soldiers and labourers were probably employed. The soldiers, able to protect the site if necessary as well as work there, camped on the heath to the east.

The defences were next reinforced by the ravelin, which was ready for occupation by the end of 1753 with its parapets, embrasures and

guard house. The ravelin then acted as a redoubt while the main rampart was being constructed. Probably in 1754 eight 12-pounders were placed in the ravelin, and eight more guns were put in temporary emplacements on top of the great mounds of earth which had by now been raised for the eastern and middle bastions. Around the latter the masonry of the rampart scarp had been begun in 1751 and was everywhere raised to the height of the cordon by 1758 (the scarp right round the fort is over a mile long). But the scarp was only part of the rampart works: in 1758 only the eastern bastions had parapets; the casemates behind two lengths of the curtain were only half built (so that the scarp of the curtains stood up as a bare screen wall with no communication along it between the eastern and middle bastions); elsewhere the terreplein (the broad fighting platform on the rampart behind the parapets) was either rough or only provisionally formed; except at the Point Battery the inner retaining walls of the rampart had not been begun.

Concurrently the internal buildings were beginning to rise. The north and south ranges of barracks were laid out in 1753 and some accommodation for officers and men in the north range was ready to be furnished in 1757, when the foundations of the grand magazine were also laid. At the end of that year, the tenth year of building, we may visualise the defences advanced in most of their basic external structures but, apart from the complete and trim ravelin, everywhere untidy and lacking finishing touches which could be executed as opportunity allowed. Inside the fort, the parade at the east end and the broad space further west between the rising barracks and the site of the provision stores (now called the Clocktower Block) still retained their natural irregular contours.

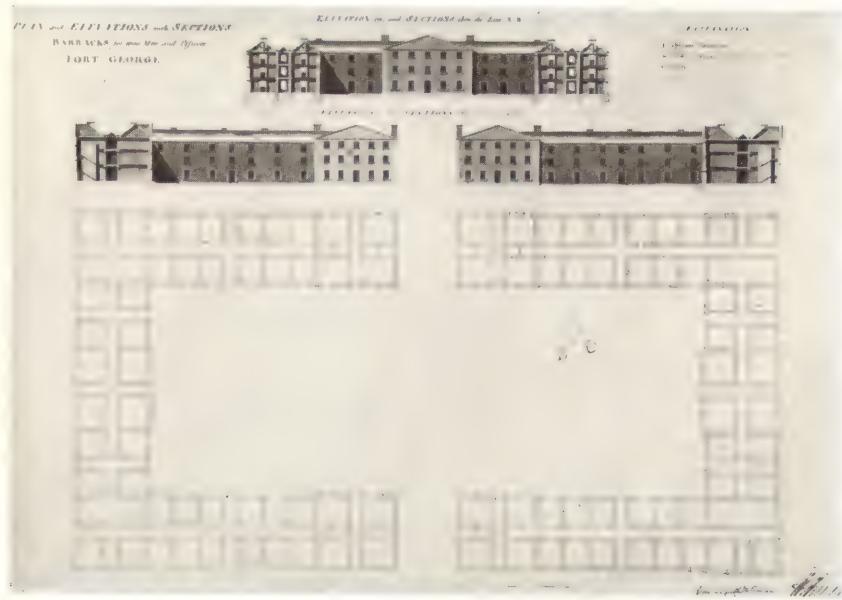
From now on, more and more parts of the works and of the internal layout assumed their final neatness and regularity. The last turves were laid on the works of the covered way in 1758, and on the last parts of the parapet of the east front in the next year. In 1762 the completion of the north casemates synchronised with the steady laying out of the terreplein right round the fort. The volume of earthmoving had now fallen off, and required only about 300 labourers and soldiers. Even so, replacement wheelbarrows were still being frequently ordered in batches of fifty.

The fort received its main armament late in 1762: twelve 42-pounders, four 32-pounders, twenty-one 18-pounders, twenty-two 12-pounders and four 6-pounders. Some of the pieces already at the fort (including the eight cannon on the ravelin and some mortars) were retained, others were shipped back to the Tower of London. In 1763 the gunners had about eighty weapons in their charge.

The last building inside the fort, the chapel, was begun in 1763.

The grand magazine, the ordnance and provision stores, and most of the barrack ranges were complete. But in the last years of work the tasks in hand were still considerable: the rampart retaining walls and their ramps; the places of arms outside the north and south sallyports; the chapel; the eastern ranges (the artillery block with the Governor's house and the staff block with the Lieutenant-Governor's house); the workshops; the levelling of the open spaces within the ramparts. In 1766-67, while the eastern ranges and the chapel were roofed, a 700-yard wide strip was roughly cleared and flattened in front of the glacis to improve the field of fire to a point beyond the line where the first trenches of a siege would normally be dug. By now the total force of labourers (a reinforcement of soldiers was no longer necessary) was usually less than a hundred.

The final undertaking was the replacement of the temporary structures over the main ditch and ravelin ditch by permanent timber bridges. In 1769 the latest buildings still probably lacked a few fittings. But apart from very minor details, work on the fort ceased in that year. Although we do not know the target date for completion, it is clear that progress had fallen behind schedule. The final cost was well over £175,000.



A plan of the barrack square drawn in 1753, when building began. Reproduced by permission of the Trustees of the National Library of Scotland.

LATER HISTORY

During the two decades when Fort George was being built, Jacobite disaffection was becoming a harmless romantic dream. Rapid social and economic change aided the political and military measures taken after Culloden to pacify the Highlands at last. By 1770 the local population regarded the new fort as a costly error—not quite a fair criticism, for in 1748 no-one could have guessed that the Highland problem would so rapidly cease to be a military one. Various line regiments succeeded each other as the garrison. When Samuel Johnson and James Boswell called in 1773 the 37th Foot was stationed there, with companies detached to Banff and Elgin.

In 1778 the 73rd Highland Regiment of Foot—one of the ancestors of the Royal Highland Fusiliers—embarked at Fort George after being raised at Elgin. Thus began a new use for the station. Most of the numerous Highland regiments which were embodied in the later part of the eighteenth century spent a few weeks or months there while being either mustered, equipped, inspected, embarked, disembarked or, eventually, disbanded. One such casual encounter later flowered into a more lasting union. In July 1793 the newly-formed 78th Highlanders paraded at the fort. The 78th returned at rare intervals in the nineteenth century until in 1881 Fort George became the depot of the Seaforth Highlanders, then formed by the amalgamation of the 72nd and 78th.

The fort had entertained more enduring occupants besides its visitors in transit (who were not confined to Highland units). In 1795 the permanent garrison consisted of a company of Invalids—men unfit for active service but capable of garrison duty—and an artillery unit: then, and for many years after, the guns on the ramparts were still kept in readiness for action that never came. It was perhaps just as well. By the end of the Napoleonic wars military men were doubtful of the effectiveness of the fort if put to the test. Improved artillery and the recent invention of the shrapnel shell meant that the east front was now uncomfortably dominated by the high ground beyond it. The place was no longer a first-rate stronghold.

After Waterloo, the continued existence of all the Highland forts was called in question. For many years Fort Augustus and Fort

William had been very doubtful assets; now, with the peacetime waning of military activity, even the ample stores and accommodation which Fort George provided were little valued. In 1817 an order to dismantle all the Highland forts was given, and countermanded. In 1835 it was proposed to convert Fort George into a prison. The proposal came to nothing and Fort George was reprieved when in 1850–51 a powerful coast defence battery was built on its north and west ramparts. The seaward-facing guns, which had at the beginning been only a subsidiary feature of the defence, now became the fort's main armament. The once formidable east front might still be adequate to fend off an enemy by land, provided that he were not equipped with a full siege train. The century-old buildings of the fort fell below contemporary standards but were capable of improvement.

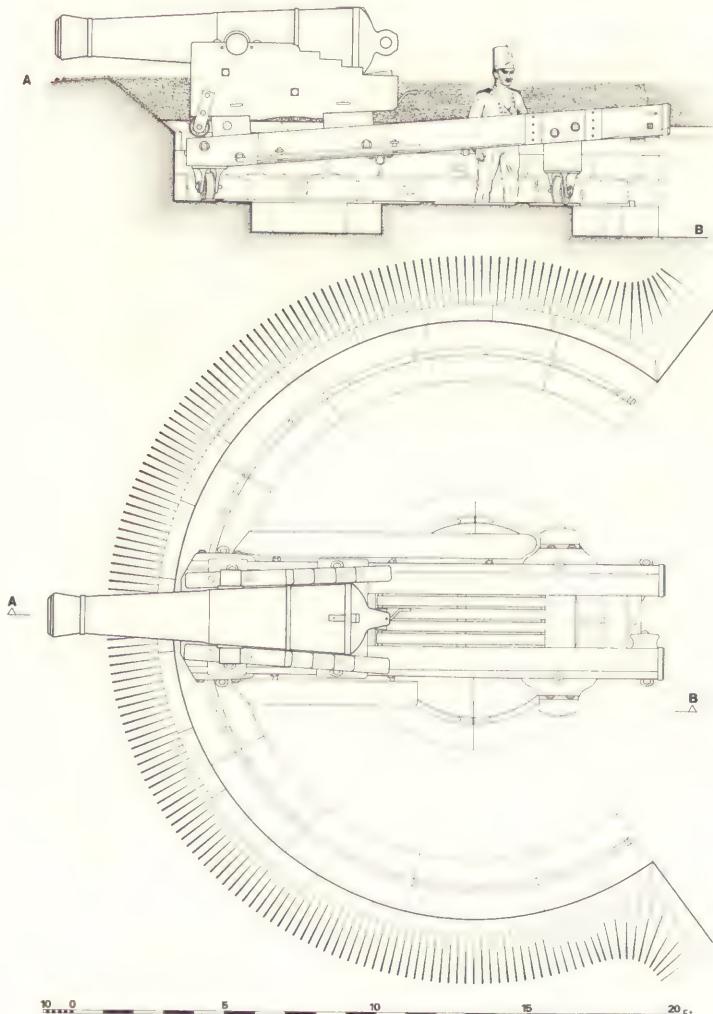
Nothing could reprieve Fort Augustus and Fort William. Unwanted and neglected, they kept up a shaky military appearance until the Crimean War, and were soon afterwards sold. Fort Augustus eventually took on a new prosperous existence as a Benedictine abbey; Fort William less auspiciously became the locomotive depot of the North British Railway. Fort George was then the only active reminder of the widespread eighteenth-century military presence in the Highlands. The barracks of 1717 had been long derelict, though the little 1748 barracks at Corgarff and Braemar Castles prolonged their working lives well into the nineteenth century as bases for soldiers helping the excisemen against smuggling and illicit distilling. (The garrisons were detached from the Invalids stationed at Fort George). The military roads had been taken over by the Commissioners of Roads and Bridges in 1814; most were improved, a few were abandoned.

The Victorian coastal battery did not keep its value for long. Within a decade its smooth-bore muzzle-loading guns were outclassed by revolutionary built-up rifled ordnance. The performance of the newly-invented weapons also finally rendered such a bastioned fortification as Fort George quite indefensible. Though some of the guns and mortars remained until 1881, they were by then decorative rather than useful.

The 1881 reorganisation of the army with territorial depots infused new life into Fort George, which remained the Seaforths' depot until 1961. The regiment was then amalgamated with the Camerons to form the Queen's Own Highlanders. When the latter marched out in 1964, the connection with the Seaforths was not severed, for their Regimental Association remains in the fort together with the museum of the Queen's Own Highlanders.

From 1964–67 the fort was used by the Territorial Army and the

Army Cadet Force. In 1967 it was once more occupied by regular soldiers, the Royal Highland Fusiliers, who found that the stately Georgian fortress was still able to satisfy their needs. The Ministry of Public Building and Works has looked after Fort George on behalf of the Ministry of Defence since 1964, and it was first opened to the public as an Ancient Monument in that year.



The Victorian coastal battery : reconstruction drawing of a 68 pounder (8.12 inch) gun mounted on a traversing platform in the 1850-51 barbette emplacement in Duke of Cumberland's bastion. The gun carriage slides on the inclined platform. In the drawing the gun is shown run forward in the firing position : the inclined plane checks the recoil after firing. The platform turns on double-flanged wheels running on iron rails.

Principal ditch, principal bridge and gate. Foreground, part of the parapet of Prince of Wales's bastion with a sentry-box and embrasure. Left, the east curtain and (beyond the bridge) Duke of Cumberland's bastion. Right, the rear of the ravelin with its guard-house.



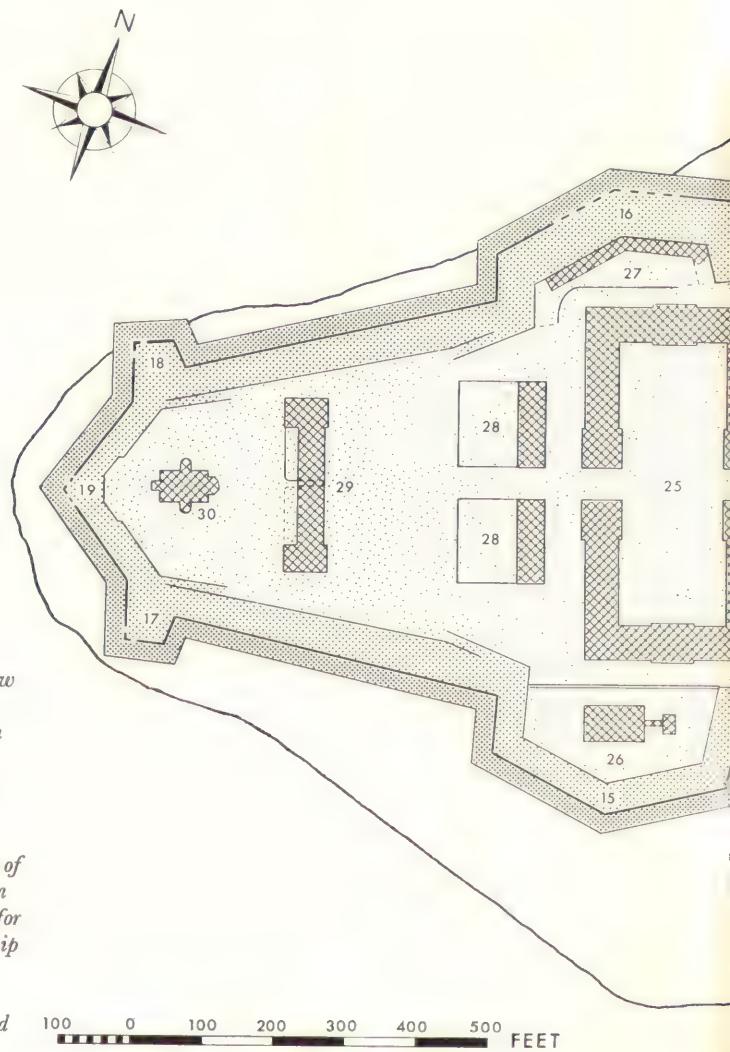
DESCRIPTION

Principal Bridge and Gate

The main body of the fort is approached over the ditch by a timber BRIDGE of fifteen spans (1765-66) at the centre of the east curtain (photograph opposite). The third span from the ravelin was a drawbridge operated by upper counterpoise beams. The innermost span, against the principal gate, was also a drawbridge which could be raised to cover the arch of the gate. The rest of the bridge was fixed, with rails like the present ones. The drawbridges survived until after 1900, when the whole bridge was in a very decayed state: for some time the enlarged south sallyport had been used as the chief entrance, and the original approach was neglected. The bridge was repaired and the drawbridges replaced by new fixed spans to match the others.

The design for the PRINCIPAL GATE was originally made by Skinner as part of his abortive project to rebuild the Cromwellian fort at Inverness, and was carried out without change at Ardersier in 1753-56. The gates of seventeenth and eighteenth century fortifications were usually architectural flourishes in an otherwise severe context and Fort George is no exception. Contrasting yellow and red sandstone emphasises pairs of Doric pilasters supporting a heavy pediment with the Royal Arms. The gate leads into a tunnel, vaulted in brick, beneath the terreplein; the tunnel still has its original massive double-leaved studded and barred doors hung in 1766 (for a decade the entrance had only temporary barriers). The tunnel opens out into an arcaded vestibule. At the south-east side of the vestibule a door opens to a stair communicating with the ditch below the principal gate. At the inside of the rampart, the vestibule is flanked by the casemated chambers of the main guard. The soldiers' guardroom is on the south side; opposite it is the officers' guardroom and the prison (called the 'Black Hole' from 1753 until the nineteenth century).

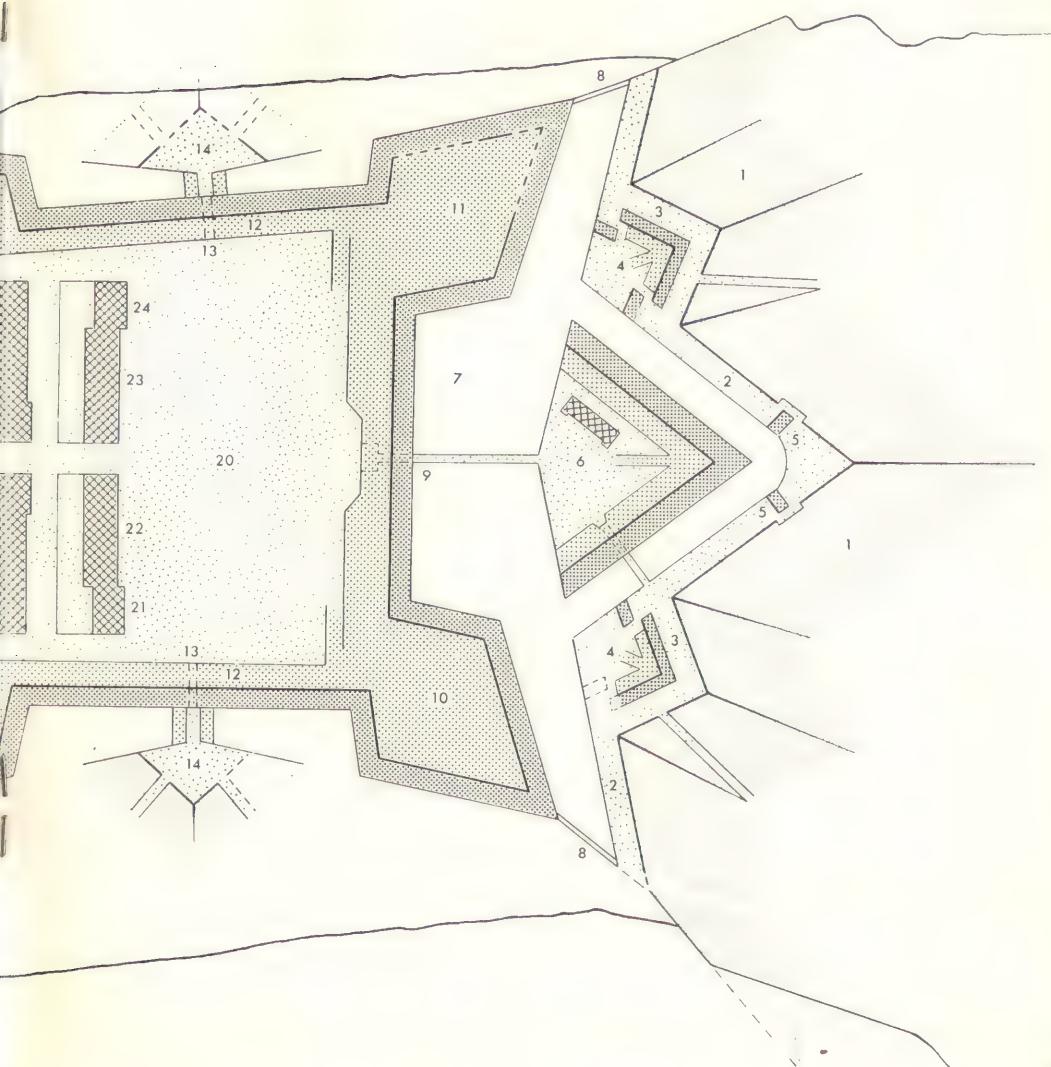
1	<i>Glacis</i>	9	<i>Principal Bridge and Gate</i>
2	<i>Covered Way</i>	10	<i>Prince of Wales's Bastion</i>
3	<i>Places of Arms</i>	11	<i>Duke of Cumberland's Bastion</i>
4	<i>Lunettes</i>	12	<i>Casemated Curtains</i>
5	<i>Traverses</i>	13	<i>Sallyports</i>
6	<i>Prince Edward's Ravelin</i> (later renamed Prince Leopold's Ravelin, see p. 36)	14	<i>Places of Arms to cover the sallyports</i> (compare 3)
7	<i>Principal Ditch</i>	15	<i>Prince William Henry's Bastion</i>
8	<i>Batardeaux closing the ditch</i>	16	<i>Prince Henry Frederick's Bastion</i>
		17	<i>Prince Frederick William's Demibastion</i>



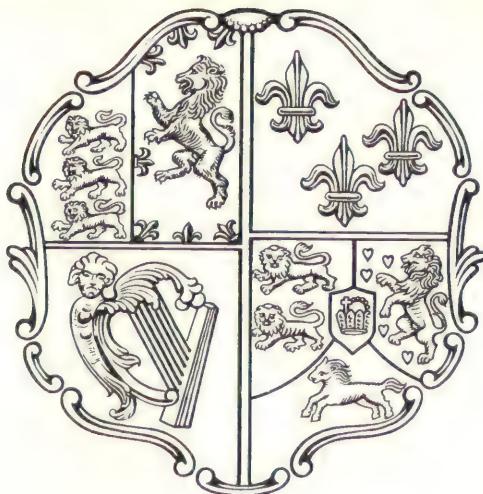
General plan of Fort George.
Solid lines and solid areas of tint show the structures and earthworks of 1748-69 which exist to-day. Broken and dotted lines delimit the few structures and earthworks which no longer exist.

Additions made after 1769 are omitted. The coastline drawn is that of to-day: since 1769 it has retreated on the north of the peninsula and (save for erosion which has removed the south tip of the glacis) has built up on the south. All the works listed are described on pages 16-41 and defined in the glossary on pages 42-3.

18 *Duke of Marlborough's Demibastion*
 19 *Point Battery*
 20 *Parade*
 21 *Governor's House*
 22 *C.O. of Artillery and Artillery Barracks*
 23 *Storekeepers' and Staff Quarters*
 24 *Lieutenant-Governor's and Fort Major's House*
 25 *North and South Ranges of Barracks round Barrack Square*
 26 *Grand Magazine*
 27 *Workshops*
 28 *Ordnance Storehouses*
 29 *Provision Storehouses, Brewery and Bakery (Clock-Tower Block)*
 30 *Chapel*



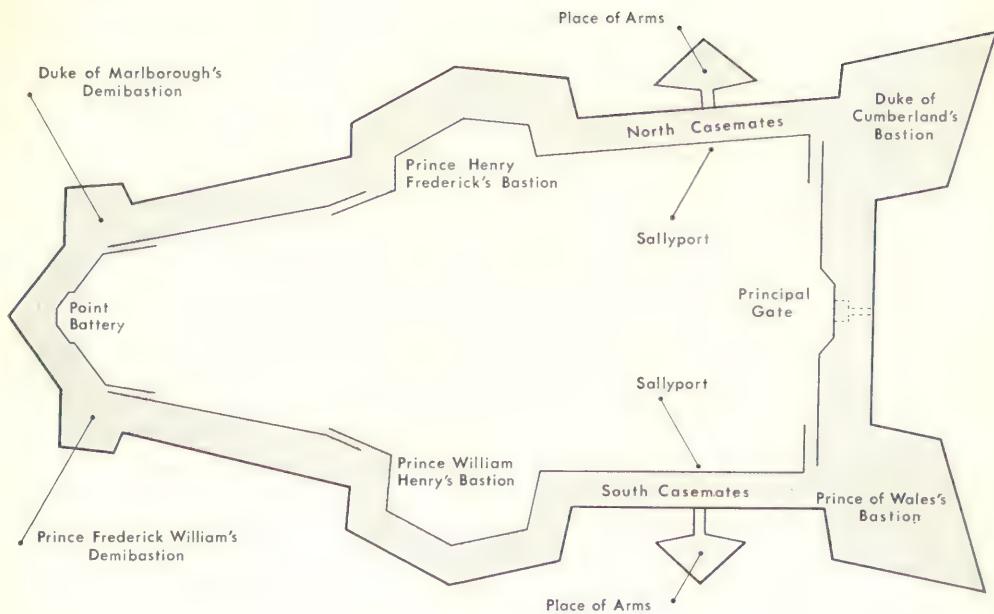




(Left) *Principal bridge and gate. The span next to the gate was a drawbridge, rebuilt as a fixed span in the early twentieth century. The entry to the ditch may be seen below the principal gate. The pediment contains the arms of George II.*

These are quarterly (see drawing, above), with England impaling Scotland in the first quarter, France in the second, Ireland in the third, Hanover in the fourth. The French fleurs-de-lys were kept in the royal arms, disregarding political reality, from the time of the Hundred Years' War until 1801. The Hanoverian arms have two lions gardant or for Brunswick, a lion rampant azure for Lüneburg, a horse courant argent for Westphalia, and overall an escutcheon gules charged with the golden crown of Charlemagne—the latter signifying the privilege of the Elector of Hanover to take part in the election of the Holy Roman Emperors. Amidst all this international heraldic pomp it is disconcerting to find that the arms of Scotland are carved wrongly—the double tressure (the lines bordering the arms) is omitted.

Rampart



The main defence of the fort is the rampart which forms a continuous line right round it. The rampart is made up of bastions and demi-bastions (half-bastions) joined by lengths of curtain. From inside the principal gate it may be reached by ramps at the south-east or north-east angles of the interior. The following description starts from the south-east with PRINCE OF WALES'S BASTION. The bastions and most of the other principal parts of the fort were named after close relatives of George II. George, Prince of Wales (who succeeded to the throne as George III in 1760) was his eldest grandson.

All bastions have a polygonal plan made up of two faces towards the field and two flanks. Their design gives a complete cover of defensive fire from the cannon embrasures and musketry firing-step at the parapet level of the flanks, along the adjoining lengths of curtain and the nearer flank and face of the adjacent bastions.

The rampart has a sloping masonry scarp twelve feet thick at the base. The inside of the masonry scarp has—except for the casemated lengths of the curtain, which will be described later—internal buttresses to increase its stability (see drawing page 30). The

buttresses are buried under a massive earthen infill which gives a broad level fighting platform, called the *terreplein*, providing an ample space for the movement of men and for the construction of additional defences in time of siege. The parapets are earth-filled and turfed, with a brick revetment and firing-step (interrupted by the embrasures and the gun platforms behind them) to the rear. The external angles of the bastions were all capped by stone sentry-boxes from which the whole of the scarp might be observed.

The piling up of earth for the infill of Prince of Wales's bastion and Duke of Cumberland's bastion (William Augustus, Duke of Cumberland, was George II's brother) and the curtain between them was started in 1749. The scarps of these works were built in 1751-56, the parapets and firing-steps being completed three years later. The ramps leading up to the east bastions were not built until 1762.

At the salients of the eastern bastions the *terreplein* is raised for long-range batteries firing in barbette over the parapets. The raised salients were intended to be completely paved. Four stone platforms for mortars were laid on the *terreplein* of the east bastions and east curtain and two of the platforms remain. The mortars could fire bombs up to one-and-a-half miles in front of the fort. In the early nineteenth century four 13-inch mortars were mounted on the platforms. They were subsequently removed, together with all the rest of the fort's artillery. (Two 13-inch mortars of 1856, on loan from Woolwich Arsenal, were mounted on the remaining platforms in 1968: photograph page 41).

Prince of Wales's bastion survives as built. Apart from the four heavy guns of the barbette battery, there are embrasures for two more heavy guns firing out to sea from the south face, and for nine lighter pieces: two on the east face covering the ravelin ditch, five on the north flank covering the main ditch, and two on the west flank. (A beginning was made in 1968 to replace the armament of the bastion by mounting two 6-pounders of 1797 and 1800 on the platforms covering the ravelin ditch). The east face of Prince of Wales's bastion gives a very good general view of the works of the east front, described on pages 36-41.

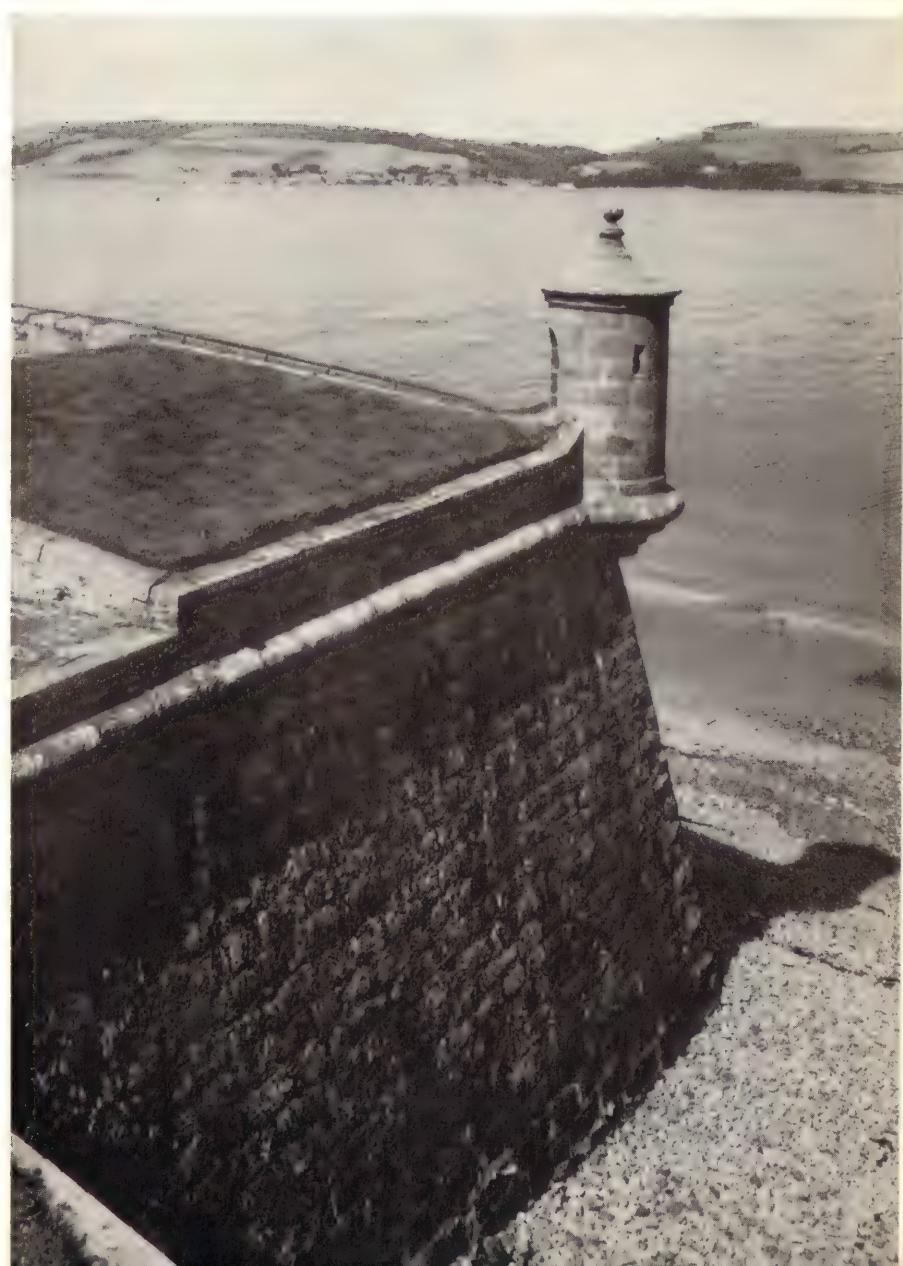
The SOUTH CASEMATED CURTAIN between Prince of Wales's bastion and Prince William Henry's bastion, and the corresponding length of curtain of the north rampart, had casemated barrack rooms for accommodation in time of siege. Each curtain could hold about 700 men in twenty-seven casemates. Construction of the casemates was delayed and they were not finished until 1762. Some of the chimneys from the fireplaces in the casemates are visible projecting through the turf of the parapet. (The casemates are described further below, page 31.)

In the middle of both curtains a SALLYPORT leads out to a PLACE OF ARMS (1761-65), a mustering point for a sortie. The south sallyport has been enlarged to form the modern main entry to the fort and the east end of the south place of arms has been removed to improve the approach road. The profile of the rest of the place of arms was reinstated in 1968 with its glacis one chain (66 feet) wide.

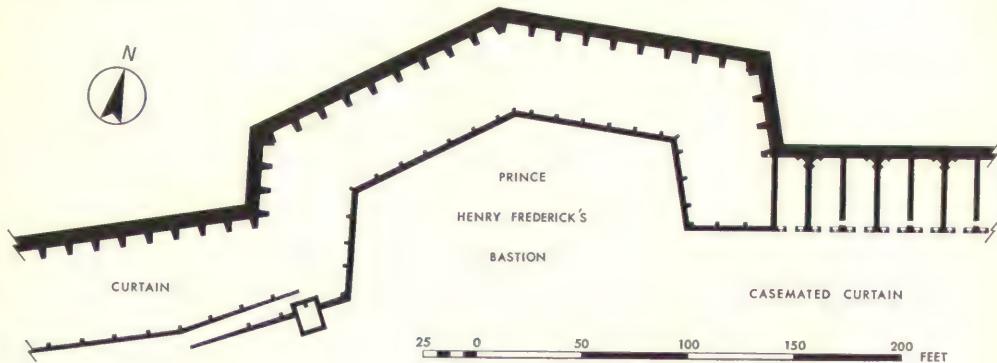
In the middle of the south front is PRINCE WILLIAM HENRY's BASTION, named after George II's third grandson. The best view of the grand magazine (page 35) may be had from this bastion, which encloses it. From the east face of the bastion may be seen a pool of water, landlocked behind a shingle bank. To the east of the pool, and no longer visible, was the pier constructed to land building materials for the fort. To the west of the pool is the surviving later pier, used to bring ashore supplies for the completed fort, to serve the civilian ferry across to Chanonry Point, and to embark and disembark many of the units which passed through the fort in the eighteenth and nineteenth centuries. Thus the south sallyport took a great deal of traffic from the very beginning. At first it also took civilians using the ferry, who had to go right through the fort between the south sallyport and the principal gate, most inconveniently for travellers and soldiers alike. So in about 1790 a new cutting was made through the glacis of the east front (page 40) for the travellers: the cutting was covered by the guns on the east flank of Prince William Henry's bastion. Though it had not been so intended, the new opening through the glacis provided a short cut to the fort itself from the east, and the south sallyport was subsequently widened and replaced the intentionally awkward approach through the east front as the main entry.

The west end of the fort is designed as two DEMIBASTIONS, named after George II's youngest grandson FREDERICK WILLIAM and the DUKE OF MARLBOROUGH, on each side of the POINT BATTERY commanding the channel between the Fort and Chanonry Point. The battery had twenty embrasures on the terreplein and two on the flanks of the demibastions. Embrasures on the north and south faces of the demibastions were soon blocked—possibly while building was still in progress. Below the terreplein the Point Battery had a small magazine and casemates for four 32-pounder guns, installed in 1763. The casemates were originally open to the rear but are now blocked up. The casemates, completed in 1758, were not in Skinner's original design and are one of his few modifications to it. In 1850-51 a coastal defence battery of the latest type was installed in the north and west fronts of the fort. The emplacements have destroyed parts of the parapet and some of the sentry boxes, including those of the Point Battery, which held three of the new guns. The latter (still smooth-

Duke of Marlborough's demibastion : the flank, showing the sloping scarp divided from the vertical parapet wall by the cordon moulding, which is carried round the sentry-box at the salient angle. The passage to the sentry-box is seen leading through the thick earthwork of the parapet.



Prince Henry Frederick's bastion and adjoining curtains: ground plan showing masonry structures. (These structures are typical of the whole fort.) The scarp wall is twelve feet thick, and it is strengthened by internal buttresses, like the much less massive inner retaining wall. The space between the scarp wall and the retaining wall is filled in solid with earth. On the left of the drawing are the foundations of a ramp (with an officers' latrine tucked into it) leading up to the terreplein. On the right of the drawing are six of the twenty-seven casemented barrack rooms of the north curtain. Each barrack room had a fireplace next to the scarp wall—the drawing shows the original design of the casemates, many of which have since been altered. The buildings of the workshop yard, which occupy the hollow centre of the bastion, are omitted.



bore muzzle-loaders) were set on wooden platforms which traversed on iron rails.

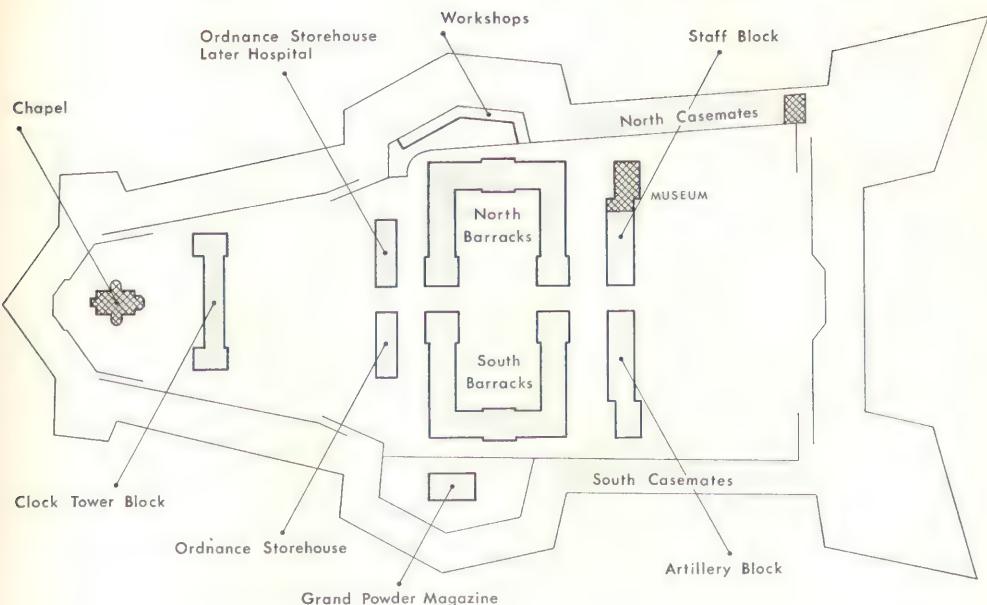
Three guns of the coastal battery were mounted on PRINCE HENRY FREDERICK'S BASTION (George II's fourth grandson), replacing four original embrasures. Beside the gun mountings are small expense magazines and shot and shell recesses built into and under the thickened parapet. The hollow centre of the bastion contains the workshop yard (page 35).

In the middle of the NORTH CASEMATED CURTAIN an unaltered sallyport leads to the north PLACE OF ARMS. The plan put the latter too close to the sea for comfort and soon its salient and most of its glacis were washed away. The place of arms was rebuilt as it exists now, with no glacis. It was later used by the Seaforth Highlanders as a cemetery for their pet dogs.

Half of the original barbette battery (page 27) in the DUKE OF CUMBERLAND'S BASTION was removed when the 1850-51 emplacements were built (drawing on page 19); the rest was modified not long afterwards, when three gun platforms were formed and the brick parapet wall rebuilt to its present indented shape.

Descending the north-east ramp from Duke of Cumberland's bastion the pair of accessible casemates nearby (pages 31-2) may be visited.

Internal Buildings



Skinner's buildings were symmetrically planned and generously surrounded by open space. Though some have been altered and added to, all survive in a remarkable state of preservation, and make up a most creditable architectural group. The diagram above shows the outline of the original buildings only, without additions. Buildings open to visitors are cross-hatched. The description which follows runs from east to west.

The eastern part of the interior was the PARADE. From the beginning it has been a broad expanse of turf. It was, and still is, used for ceremonial parades, while normal drill has always been carried out on the barrack square. The parade is flanked by the CASEMATES under the ramparts. In the nineteenth and twentieth centuries most of the casemates have had larger windows opened to them to increase the amount of light—since they were first meant for occupation under siege conditions security was more important than lighting. As built, the casemates had a shuttered ventilating slit on each side of the door and a roundel above it; there were no openings through the scarp wall, though many openings have subsequently been made.

The facades of the artillery block and staff block towards the parade, separated by the main street of the fort. The Queen's Own Highlanders' Museum is at the north end of the staff block, in the house built for the Lieutenant-Governor and the Fort Major, on the extreme right of the photograph.



Each casemate was meant to hold up to forty men. In the nineteenth century they were frequently used by militia units in preference to living under canvas on the heath outside the fort. A pair of unaltered casemates at the east end of the north rampart is normally left open for visitors.

The ARTILLERY BLOCK (1762-66) and the STAFF BLOCK (1761-66) make up an imposing facade closing the west side of the parade (above). The building with pediment and portico at the south end of the artillery block was the Governor's House, now the Officers' Mess. As an honour for his services William Skinner was appointed the first governor of the fort. (This was not his only reward in a meritorious professional life: he ended his career as Director of Engineers, holding the rank of Lieutenant-General). As its first occupant Skinner had the governor's house decorated. The fittings included two fireplaces by James Adam, whose elder brother John held the largest contract for the fort's construction. The rest of the artillery block housed the



detachment of gunners manning the armament of the fort: the men above the piazza, the officers in the north pavilion. The staff block contained quarters for staff and storekeepers with, at its north end, the house for the Lieutenant-Governor and the Fort Major. The latter is now the museum of the Queen's Own Highlanders. (The museum is separately administered from the fort: inside front cover.)

The ranges of BARRACKS had accommodation for the officers and men of two infantry battalions. They were the first structures inside the fort to be begun, in 1753, when both ranges were laid out (contemporary plan page 16). The north range was finished in 1761, the south range in 1764. (The Royal ciphers of George II and III with dates 1757 and 1763 on the pediments of the central pavilions of the north and south ranges mark the completion of the pavilions, not the ranges as a whole). The central and terminal pavilions in both ranges were for officers; the men occupied the remainder, in small barrack rooms each holding eight men in four double beds. The

The chapel



little rooms are fashionable again now, but with only four men in each. The fort had no kitchens and dining-rooms when built (these amenities are now provided in a converted suite of casemates in the north rampart): the men prepared meals in their barrack rooms.

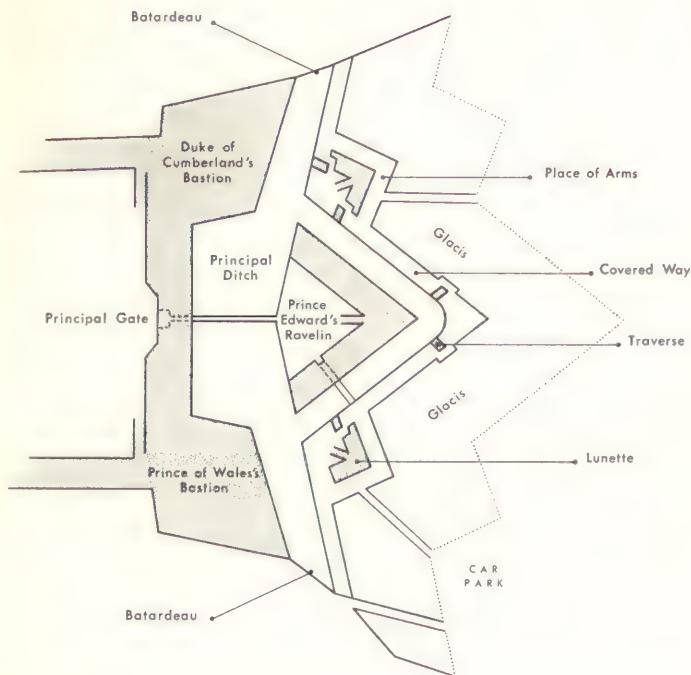
Set in the open centres of the bastions on each side of the barracks are the **WORKSHOP YARD** to the north, with its original ranges of lean-to artificers' shops, and the monumental **GRAND MAGAZINE** to the south. The latter could hold about 2,500 barrels of powder in a spacious and well-ventilated floor area with timber-lined walls. The vaulted roofs were designed to withstand a direct hit by mortar bombs.

The twin **ORDNANCE STORES** (1759-61) were for arms and military equipment. The south block is still a store. One end of the north block was partly adapted in the late eighteenth century as a hospital (Skinner did not provide one), and was much enlarged later for the same purpose to meet higher medical standards. The ground floor windows, originally circular, have been altered in both blocks. Part of a broad open space behind the yards of the ordnance stores is now filled by the **NAAFI**, designed in 1934 as the **Seaforths' Regimental Institute**—the only completely new building in the fort.

The **CLOCK-TOWER BLOCK** was built in 1760-62 as a pair of provision stores joined by a centrepiece through which ran the east-west road. The original clock was placed in a timber hexagonal tower surmounted by a cupola, rising behind the pediment of the centrepiece. At each end of the provision stores were pavilions for the brewer and baker above the brewery and bakery. The pavilion and store at the south end, now the **Sergeants' Mess**, was unsympathetically re-roofed and had new windows inserted in 1952 after a fire. The store at the north end was converted into detention cells in the nineteenth century.

The **CHAPEL** (opposite) was built in 1763-67 in the final stages of work on the fort. The plain, handsome exterior has a polygonal chancel and a squat western tower with battlements (it was possibly also meant to have a cupola), and is flanked by rounded stair wings. The chapel is open to visitors during the same hours as the fort. Inside, a two-tiered arcade runs round three sides: the lower tier with its Roman Doric order supports the gallery. A Latin inscription over the chancel arch reads 'George III, by the grace of God King of Great Britain, France, and Ireland, 1767'. Originally the three-decker pulpit, surmounted by a sounding-board, stood under the middle of the chancel arch: the movement of the pulpit is the only significant change in the internal arrangement.

East Front



The eastern scarp of the Duke of Cumberland's bastion, the Prince of Wales's bastion and the curtain which joins them, rise thirty-two feet above the PRINCIPAL DITCH. The ditch, 980 feet long and 160 feet wide at the centre of the front, is an excavation which matches the bastions in its great scale. At the north and south ends of the ditch are cross-walls called BATARDEAUX which acted as dams to hold water: it could be flooded at high tide by opening sluice-gates in the batardeaux. The ditch was normally kept dry and in general it was always a moot point whether in time of siege a water-filled ditch was desirable. Though it was a hindrance to the enemy, it was also an obstacle to the defenders who were thus denied the cover of the ditch in moving about between the outworks. The outer halves of both batardeaux have the seatings for the windlasses which opened the sluice gates, behind parapets loopholed for musketry. Their inner halves are finished with steeply gabled copes, interrupted by drums of solid masonry: the copes and drums were designed to prevent an enemy attempting an escalade of the bastion salients. Swept by crossfire from the bastions, the ditch is by itself an impassable obstacle to unsupported assault. In the earliest bastioned fortifications, the defences comprised only the rampart and a broad ditch. The latter protected

The ravelin was originally named after Prince Edward, the second grandson of George II, and was renamed in honour of Prince Leopold of Saxe-Coburg, who married the Prince Regent's daughter in 1816. The photograph shows the principal bridge crossing the main ditch to the rear of the ravelin, and the smaller bridge crossing the ravelin ditch to the covered way. Beside the ravelin guard house a ramp leads up to the fighting platform. On the right of the photograph, beyond the counterscarp of the ravelin ditch, is the covered way with traverses across it and flights of steps leading down from it to the ditch (see also photograph on p. 38). At left background of the photograph is the Duke of Cumberland's bastion, with the batardeau closing the ditch.



the lower part of the scarp from distant hostile gunfire. But by improved siegework it became possible to bring a battery up to the outer margin of the ditch and make a breach in the rampart by close-range fire. The need to delay an attack at a safe distance from the rampart led to the development of outworks such as those at Fort George.

The bridge over the ditch leads to the largest and strongest of the outworks, the triangular RAVELIN (above), constructed in 1749-53. The ravelin is completely isolated by its own ditch; the latter, with the faces of the ravelin, could be scoured by fire from embrasures in the bastions. (The triangular shape of the ravelin is dictated by the need to give it complete flanking defence from the fort bastions.) The ravelin has a rampart with parapet, embrasures for eight 12-pounder guns and a musketry firing-step on its two faces; the rear is open so that it could be commanded from the bastions and curtains of the fort itself. Thus even if the ravelin were evacuated, the defence could still contest any attempt by an enemy to occupy it. The ravelin has its own guard-house, and a gate leading by a tunnel to the outer defences. The bridge over the ravelin ditch was built about 1768, the last of all the fort's original structures. Until then a temporary bridge had been used.

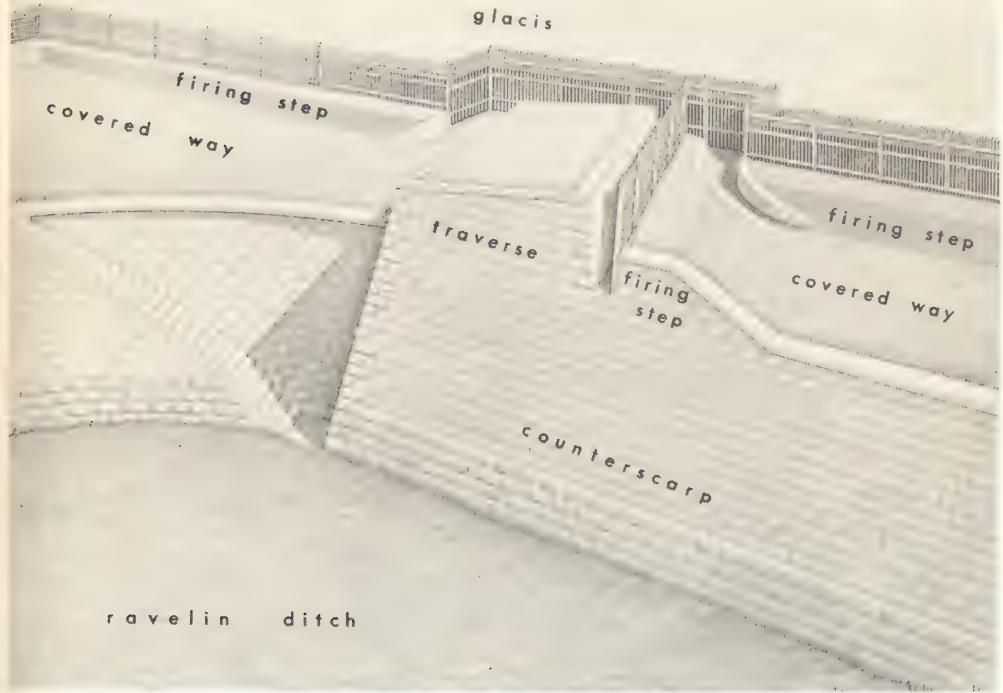
The covered way with a traverse across it. Left, photograph showing 1968 state; right, key drawing with original palisades sketched in. From the covered way a flight of steps leads down the counterscarp to the bottom of the ravelin ditch. A high palisade of sharpened stakes was originally set in the trench between the parapet of the traverse and its firing-step, and palisades were set in a similar position between the parapet and the firing-step of the covered way. The sections of the covered way palisades could be unfastened from the main upright posts and laid



The outer margin of the principal ditch and the ravelin ditch is closed by the COUNTERSCARP (1749-51), a masonry wall sloping or battered like the scarp. The angles of the counterscarp have flights of steps leading into the ditches to help the concealed movements of the defenders, who could enter or leave the ravelin and the principal gate by doors at the level of the bottom of the main ditch.

On top of the counterscarp is the COVERED WAY, thirty-eight feet wide (see photograph and drawing above). The covered way is the outermost defensive line, so-called because it is covered from attacking horizontal fire by a brick parapet wall. Below the wall is an earthwork firing-step. Originally there was a stout wooden

flat, so as not to obstruct the defenders leaving or returning to the covered way on a sally. Gates of like construction to the palisades (not shown on the drawing) were provided to close the passages between the traverses and the covered way and its works. Beyond the brick parapet wall of the covered way (this section of the parapet was cemented over in the nineteenth century) is the grass slope of the glacis.



palisade along the front edge of the firing-step to hinder an enemy trying to jump down on to the covered way. The area of the covered way is enlarged by two angular PLACES OF ARMS, assembly points for counter-attack; inside the places of arms are LUNETTES of similar shape, designed to resist penetration of the covered way. The lunettes have their own little fighting platform and firing-step: these works in the places of arms are an eighteenth-century innovation. Short TRAVERSES (with palisades and firing-steps) which are set across the covered way could also confine penetration, though their main function was to stop enfilading cannonballs from rolling murderously along the covered way. The north lunette was badly damaged during

the Second World War when it was included in the area of an assault course. Reinstatement to its original form was begun in 1969. The south lunette has remained intact save for the loss of part of its parapet by the encroachment of a now-demolished twentieth century building—the latter also destroyed the traverse immediately south of the lunette. These works will be restored. No cannon were mounted on the covered way or on its works; they were defended by musketeers standing on the firing-step. The north sea-wall of the covered way has a latrine corbelled out from it. A similar latrine at the south wall was destroyed when the 1790 cutting through the glacis removed the original end of the covered way.

A smoothly graded strip of ground two-and-a-half chains (165 feet) wide falls in a gentle slope from the top of the zig-zag wall of the covered way down to original ground level. This strip of ground, the limit of the works, is called the GLACIS. As well as protecting the covered way, the glacis earthwork helps to shield the masonry scarps of the fort rampart and the ravelin from bombardment. In 1748-49 the glacis was formed and the brick wall of the covered way was built. (The rapid construction of the brick wall has left evidence of haste in its workmanship: the failing brickwork is at present being extensively rebuilt.) After this quick start, progress on the covered way and its works slackened: the last turves were laid on them only in 1758. Two cuttings were originally made through the glacis to allow rapid egress. The southern cutting carried the roads from Inverness and Nairn and the military road from Blairgowrie (constructed in 1749-54) into the fort—this is the approach by which visitors now enter the fort from the car park. In about 1790 a third cutting was made through the glacis south of the ditch for civilian traffic to and from the ferry (page 28). The new cutting accidentally helped to preserve the fort, for when the south sallyport was later widened as the main entry the original tortuous approach through the east front with its bridges and vaulted gates was by-passed and left intact. A huddled camp erected in 1938 on the southern half of the glacis was dismantled in 1966 and in the following two years the profile of the whole glacis was reinstated.

In 1766-67 a zone 700 yards deep in front of the glacis was roughly cleared right across the peninsula to remove obstructions so that the gunners on the bastion salients had an open view of targets up to half a mile away—a zone of fire which would take in the most distant works of a regular siege.

An attack on the east front could only succeed if heavily supported by artillery, advanced by stages under cover of siege earthworks. The progress of even the best-conducted operation was slow and painful. The approach of the besiegers could be opposed by fire from the

batteries in the bastion salients, and by counter-attack from the covered way and from the sallyports on the north and south fronts. At Fort George there was a further hazard: not only was it impossible to cut siege trenches into the shingle of the peninsula without special revetment, but the shingle would also break into dangerous flying splinters under fire. Any eventual penetration of the covered way was limited by the traverses and lunettes placed in it. If the covered way and lunettes fell, the defence could be withdrawn to the ravelin. If the ravelin in turn were lost the defence could be prolonged from the bastions until one of them was breached at point-blank range by batteries emplaced on the crest of the glacis. Only then could the final assault be made with any confidence of success.

The defences of the east front have never been altered. Nowhere else in Britain can so complete a view be obtained of the defensive system of an artillery fort.

13-inch mortar of 1856 on cast-iron bed mounted on the east curtain. There have probably been mortars of 13 inch (the largest) calibre at the fort since it was first armed. This Victorian mortar has a plainer design and a better performance than its eighteenth century predecessors, but is generally similar. Mortars were fired at a fixed angle of 45 degrees; range was varied by altering the gunpowder charge.



GLOSSARY

MILITARY engineers used a number of technical words to describe the parts of an artillery fortification. The list below gives a short definition of the technical words in the guide-book.

<i>barbette</i>	a battery or single gun firing over the parapet, not through embrasures.
<i>bastion</i>	the strongpoint of an artillery fortification corresponding to a tower of a medieval castle or town wall. All bastions have two faces (see below) meeting at an angle, and two flanks (see below) which join the faces to the curtains.
<i>batardeau</i>	a dam across the ditch with sluice-gates to control the water level in the ditch.
<i>casemate</i>	originally a vaulted gun emplacement; usage of the term was later extended to include (as at Fort George) accommodation protected from gunfire.
<i>cordon</i>	the half-round moulding at the top of the scarp (see below) dividing the scarp from the parapet.
<i>counterscarp</i>	the sloping wall forming the outer limit of a ditch.
<i>covered way</i>	the strip of ground making a defensive line beyond the ditch, covered from fire by a parapet wall.
<i>curtain</i>	the length of rampart between two bastions.
<i>demibastion</i>	a half-bastion with one flank and one face.
<i>face</i>	the straight sides of a bastion or other work towards the field are called the faces.
<i>flank</i>	the faces of a bastion are joined to the curtain by the flanks.
<i>glacis</i>	a broad smoothly graded strip of ground falling in a gentle slope from the parapet wall of the covered way and places of arms.
<i>lunette</i>	in general, used to describe various works with two faces; at Fort George a work of two faces within a place of arms to strengthen it.

<i>parapet</i>	a breastwork, usually with sufficient earthwork in front of it to make it proof against cannon fire.
<i>place of arms</i>	a mustering point for a sortie protected from fire by a parapet; especially, an enlargement of the covered way with this function.
<i>rampart</i>	the continuous work raised to surround a fortified place, including at Fort George bastions, demibastions and curtains.
<i>ravelin</i>	a detached triangular work, surrounded by its own ditch, built in front of a curtain, and by the eighteenth century a major element of the defence.
<i>scarp</i>	the sloping outer walls of the rampart and ravelin.
<i>terreplein</i>	the broad level fighting platform on the rampart behind the parapet.
<i>traverse</i>	in general, a work to obstruct enfilading fire and attack; in particular at Fort George, a work built across the covered way with these functions.

BOOKS

No study of Fort George has been published and there is no detailed overall treatment of its background. Most of the facts in the guide book are taken from manuscripts and plans in the National Library of Scotland, the Public Record Office, the British Museum and elsewhere. Fort and background are included by Stewart Cruden in the last chapter of *The Scottish Castle* (1960) but the account is meant as no more than a summary postscript to the book's theme. John Fleming in *Robert Adam and His Circle* (1962) mentions the connection of the Adam family with the fort. Fragments of the background are dealt with in several places: C. H. Firth, *Scotland and the Protectorate* (1899) on the Cromwellian fortifications; the *Stirlingshire Inventory* of the Royal Commission on the Ancient Monuments of Scotland (1963) on Inversnaid, one of the 1717 barracks; J. B. Salmond on *Wade in Scotland* (1934); W. D. Simpson, *Proceedings of the Society of Antiquaries of Scotland* (1926-27) on Corgarff Castle, one of the 1748 barracks.

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